



DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Prospective Grant of Exclusive Patent License: Human Therapeutics for Fibrotic Disease

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The National Heart, Lung and Blood Institute (NHLBI), National Institutes of Health, Department of Health and Human Services, is contemplating the grant of an exclusive patent license to Inversago Pharma, Inc., located in Montreal, Quebec, Canada, to practice the inventions embodied in the patent applications listed in the Supplementary Information section of this notice.

DATES: Only written comments and/or applications for a license which are received by the NHLBI Office of Technology Transfer and Development [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] will be considered.

ADDRESSES: Requests for copies of the patent applications, inquiries, and comments relating to the contemplated exclusive patent license should be directed to: Michael Shmilovich, Esq., CLP Senior Licensing and Patenting Manager, phone number 301-435-5019 or shmilovm@nih.gov.

SUPPLEMENTARY INFORMATION:

The following and all continuing U.S. and foreign patents/patent applications thereof are the intellectual properties to be licensed under the prospective license to Inversago Pharma, Inc.:

NIH REF NO.	PATENT No. or APPLICATION No.	ISSUE DATE	FILING DATE	TITLE
E-282-2012-0-US-01	61/725,949		November 13, 2012	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-PCT-02	PCT/US2013/069686		November 12, 2013	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-US-03	9,765,031	September 19, 2017	November 12, 2013	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-CA-04	2889697		April 27, 2015	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-EP-05	2919779	January 6, 2021	June 01, 2015	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-CH-12	2919779	January 6, 2021	November 12, 2013	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-DE-13	2919779	January 6, 2021	November 12, 2013	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-FR-14	2919779	January 6, 2021	November 12, 2013	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-GB-15	2919779	January 6, 2021	November 12, 2013	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-IE-16	2919779	January 6, 2021	November 12, 2013	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-IN-06	354301	December 23, 2020	May 1, 2015	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-JP-07	6272626	January 12, 2018	May 11, 2015	Cannabinoid Receptor Mediating Compounds

E-282-2012-0-CN-08	ZL201380069389.9	August 20, 2019	July 3, 2015	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-US-09	10,683,270	June 16, 2020	August 10, 2017	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-US-10	10,787,419	September 29, 2020	August 10, 2017	Cannabinoid Receptor Mediating Compounds
E-282-2012-0-US-11	16/870,093		May 8, 2020	Cannabinoid Receptor Mediating Compounds
E-282-2012-1-US-01	62/171,179		June 4, 2015	Cannabinoid Receptor Mediating Compounds
E-282-2012-1-PCT-02	PCT/US2016/035291		June 1, 2016	Cannabinoid Receptor Mediating Compounds
E-282-2012-1-US-08	15/579,123		December 1, 2017	Cannabinoid Receptor Mediating Compounds
E-282-2012-1-US-09	16/438,850		June 12, 2019	Cannabinoid Receptor Mediating Compounds
NIH REF NO.	PATENT No. or APPLICATION No.	ISSUE DATE	FILING DATE	TITLE
E-140-2014-0-US-01	61/991,333		May 9, 2014	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-PCT-02	PCT/US2015/029946		May 8, 2015	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-AU-03	2015255765		November 7, 2016	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-CA-04	2948349		May 8, 2015	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-CN-05	201580028788.X	February 7, 2020	May 8, 2015	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-EP-06	15728668.3		May 8, 2015	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-IN-07	201637038171		November 8, 2016	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-JP-08	6762930	September 11, 2020	May 8, 2015	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-US-09	10,329,259	June 25, 2019	November 8, 2016	Cannabinoid Receptor Mediating Compounds
E-140-2014-0-HK-10	17105705.6		June 9, 2017	Cannabinoid Receptor Mediating Compounds

The patent rights in these inventions have been assigned to the Government of the United States of America. The prospective exclusive patent license territory may be worldwide and in a field of use limited to human therapeutics for fibrotic disease.

The invention covered by the patents and patent applications pertaining to NIH Ref. No. E-282-2012-0 and -1 pertain to cannabinoid receptor 1 (CB₁R) inverse agonists. CB₁R activation plays a key role in appetitive behavior and metabolism. Of importance as a therapeutic target here is that the receptor is expressed in both peripheral tissue as well as the CNS. The invention is a class of pyrazole compounds that act as CB₁ receptor inverse agonists and have been shown effective at reducing obesity and its associated metabolic consequences, and for fibrotic disease, while having no experimentally discernable neuropsychotropic side effects that are considered adverse such as the earlier antagonists rimonabant. These CB₁R receptor compounds were developed with the goals of limiting their brain penetrance without losing their metabolic efficacy due to CB₁ inverse agonism, and having a primary metabolite directly targeting enzymes involved in inflammatory and fibrotic processes associated with metabolic disorders. The patents are both

compositions of matter and methods of use.

The inventions covered by HHS Ref. E-140-2014-0 also pertain to pyrazole CB₁R receptor inverse agonists. In addition, some of these compounds also have a direct inhibitory effect on inducible nitric oxide synthase (iNOS), whereas another group of the compounds directly activates AMP kinase. There is evidence that the metabolic effects of endocannabinoids are mediated by CB₁ receptors in peripheral tissues. These dual-target compounds may be useful for treating metabolic disease and related conditions such as obesity and diabetes and their complications, and includes various fibrotic disorders, without the dangerous the side effects.

This notice is made in accordance with 35 U.S.C. 209 and 37 CFR Part 404. The prospective exclusive patent license will be royalty bearing and may be granted unless within fifteen (15) days from the date of this published notice, the NHLBI receives written evidence and argument that establishes that the grant of the license would not be consistent with the requirements of 35 U.S.C. 209 and 37 CFR Part 404.

Complete applications for a license in the prospective field of use that are timely filed in response to this notice will be treated as objections to the grant of the contemplated exclusive patent license. Comments and objections submitted to this notice will not be made available for public inspection and, to the extent permitted by law, will not be released under the *Freedom of Information Act*, 5 U.S.C. 552.

Dated: January 3, 2022.

Michael Shmilovich,

Senior Licensing and Patenting Manager,

National Heart, Lung, and Blood Institute,

Office of Technology Transfer and Development.

[FR Doc. 2022-00022 Filed: 1/5/2022 8:45 am; Publication Date: 1/6/2022]